

REMARKS

Based on the above amendments and the following remarks, this application is deemed to be in condition for allowance and action to that end is respectfully requested.

Disposition of Claims

Claims 1-41 have been cancelled without prejudice in this application

Claims 42-133 remain in this application and stand rejected.

Response to Claim Rejections - 35 U.S.C. § 112

The Examiner rejected claims 88, 101, 111 and 124 under 35 U.S.C. 112, second paragraph. According to the Examiner, there is insufficient antecedent basis for the limitation "said optical portion" in the claims. The Applicant has amended the claims at issue to provide the requisite antecedence. Accordingly, the Applicant submits that this rejection has been overcome and withdrawal thereof is respectfully requested.

Response to Claim Rejections - 35 U.S.C. § 103

The Examiner rejected claims 42-133 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 3,758,194 (Daval) in view of U.S. Patent No. 3,551,051 (Salgo) in further view of U.S. Patent No. 5,710,655 (Rumbaugh). The claims have been amended to more particularly define the invention in a patentable manner over the cited references. No new matter has been added.

More particularly and based on the following remarks, the Applicant respectfully submits that the amended claims in this application are not rendered obvious under 35 U.S.C. § 103.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Third, the prior art references (or references when combined) must teach or suggest all the claim limitations (i.e., the subject matter of the claims). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on an applicant's disclosure in the specification. See In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

First, the Applicant respectfully submits that there is no suggestion or motivation, either in Daval, Salgo and Rumbaugh themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify Daval, Salgo and Rumbaugh or to combine reference teachings to make the Applicant's claimed invention. Second, the Applicant respectfully submits that Daval, Salgo and Rumbaugh, even if combined, fail to disclose, either expressly or inherently, the subject matter of the claims.

The amended claims of this application cover an embodiment of the present invention that comprises, in pertinent part, an optical device having the following elements:

(a) a first substrate having a very low absorption loss. The first substrate includes an inner surface and an outer surface with the inner surface thereof having a very high reflective coefficient of r_1 ;

(b) a second substrate having a very low absorption loss. The second substrate includes an inner surface and an outer surface with the inner surface thereof including: i) a transmission-optimized optical portion to facilitate input of light beams into the device and ii) a reflective portion having a reflective coefficient of r_2 wherein r_1 is greater than r_2 . The outer surface of the second substrate has a transmission coefficient of t to facilitate light beams in and out of the device. The second substrate is mounted parallel to the first substrate with respective inner surfaces facing each other; and

(c) a beam collimating element positioned to guiding an input light beam to travel through the optical portions of the second substrate to: 1) hit a first point on the inner surface of the first substrate, 2) reflect off of the first point, at a near normal incidence angle, towards a second point on the reflective portion of the inner surface of the second substrate, the second point spaced from the optical portions so as not to interfere with the input light beam, 3) hit the second point and i) partially reflect off of the second point towards the reflective portion of the inner surface of the second substrate such that there is no interference of reflected beams within the device and ii) partially travel through the respective surfaces of the second substrate to generate the one of the output light beams. (Emphasis added)

Unlike the present invention, known interferometers such as those in the cited references operate on the principle of interference within the cavity to obtain sharp resonances and therefore very narrow band filters. By having no interference within the

cavity and having only interference in the beams outside of the cavity, the Applicant has developed a device which is a non-resonant band pass filter having the ability to control the frequency and bandwidth thereof. The combination of Daval in view of Salgo in further view of Rumbaugh does not teach or suggest this important and distinguishable feature of the claimed invention. Instead Daval, Salgo and Rumbaugh are directed to ordinary interferometer devices, each of which are designed to cause interference of light beams within the cavity of their respective devices. In addition, neither Daval, Salgo and Rumbaugh show the transmission-optimized optical ports as shown and claimed in the present invention.

Therefore, based on the above remarks, the Applicant respectfully submits that the claimed invention is unobvious over the applied prior art. More particularly, the pending claims recite limitations that distinguish over Daval in view of Salgo in further view of Rumbaugh under 35 U.S.C. §103. Accordingly, the rejection under 35 U.S.C. § 103(a) is overcome and withdrawal thereof is respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance and accordingly, allowance of the application is respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's Amendment and the case passed

to issue. Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

The Commissioner is authorized to charge all required fees, including any extension and excess claim fees, or credit any overpayment to Deposit Account 06-0923.

Applicant claims small entity status. See 37 C.F.R. 1.27.

Respectfully submitted for Applicant,



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